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BEFORE THE ARIZONA CORPORATION COMMISSION Arizona Corporation Commission

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IN THE MATTER OF THE APPLICATION OF) DOCKET NO. E-04204A-07-0365
UNS ELECTRIC, INC. FOR APPROVAL OF ITS)
DEMAND-SIDE MANAGEMENT PROGRAM)
PORTFOLIO.) **NOTICE OF FILING**

In compliance with Decision No. 72024, UNS Electric, Inc. hereby submits a Supplement to its 2012 Electric Energy Efficiency Plan.

RESPECTFULLY SUBMITTED this 30th day of June 2011.

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1 Original and 13 copies of the foregoing
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6 this 30th day of June 2011 to:

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Supplement to UNS Electric, Inc.'s 2012 Electric Energy Efficiency Plan

Impact of Estimated External SO₂, NO_x, PM₁₀ and Water Costs

In Decision No. 72024 (December 10, 2010), the Arizona Corporation Commission (“Commission”) “ordered that UNS Electric, Inc. shall work with stakeholders to develop appropriate metrics and monetize costs for water, Sox, PM10, and Nox emissions savings as part of the societal cost test as a supplement to its 2012 Energy Efficiency Implementation plan, but no later than July 1, 2011.” In compliance with Decision No. 72024, UNS Electric, Inc. (“UNS Electric”) jointly participated with Arizona Public Service Company (“APS”) and Tucson Electric Power Company (“TEP”) in an extended stakeholder meeting on externalities on February 24, 2011. At the meeting, interested parties from across Arizona discussed the estimated financial impacts of sulfur dioxide (“SO₂”), particulate matter (“PM₁₀”) and nitrogen oxide (“NO_x”), and water usage on the environment.

With respect to estimated SO₂, NO_x and PM₁₀ impacts, the consensus was to use the comprehensive and current findings in the “Hidden Costs of Energy” report (“Report”) by the National Academies of Sciences’ National Research Council (“NRC”). The group identified several benefits to using this Report rather than generating an original one, including: (1) that the Report is based on research and conclusions that use clearly defined sources with a long list of external reviews; (2) that the Report utilized the same concentration response function and a similar value for statistical life as used by the Environmental Protection Agency (“EPA”); and (3) that the Report presented societal costs specific to power plants operated in both Arizona and New Mexico.

With respect to water usage, the consensus was to estimate the avoided cost of water as an opportunity cost of \$666 per acre foot in 2010 dollars.

Table 1 sets forth the estimated external costs from the Report specific to UNS Electric’s resources.¹

¹ The Report included details for the UNS Electric Valencia Generating Station, which was used as a proxy for all remaining combustion turbines (“CTs”) and future CTs. Since most of the power for UNS Electric is procured through purchase power agreements, a proxy was selected from the Report to represent the externalities from generating the purchased energy.

Table 1

FUEL	OPR NAME	FACILITY NAME	\$/Ton of SO ₂	\$/Ton of NO _x	\$/Ton of PM ₁₀	\$/MWh of SO ₂	\$/MWh of NO _x	\$/MWh of PM ₁₀
Gas	UNSE	Valencia (Proxy for Black Mountain Generating Facility and Future Local Area)	2,589	945	279	0.40	1.63	0.02
Gas	Calpine	South Point Energy Center (Proxy for UNSE Purchase Power)	1,855	597	179	0.00	0.03	0.00

The plant-specific details in the Report – and the estimated opportunity cost of water – were used to determine the estimated avoided future year external environmental cost of SO₂, PM₁₀, NO_x and water usage based on UNS Electric’s planned generation portfolio, annually, based on a dollar per megawatt hour (“MWh”) basis. Table 2 sets forth those estimated annual costs for the period 2011 through 2020.

Table 2

\$/MWh (Nominal)	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
SO ₂	0.01	0.01	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02
H ₂ O	0.68	0.70	0.71	0.72	0.74	0.75	0.77	0.78	0.80	0.81
NO _x	0.04	0.04	0.04	0.04	0.05	0.05	0.05	0.05	0.05	0.05
PM ₁₀	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.74	0.75	0.77	0.78	0.80	0.81	0.83	0.85	0.87	0.89

UNS Electric’s Electric Energy Efficiency Standard Implementation Plan (“EE Plan”) for 2012 (filed on January 31, 2011) did not include an analysis of the impact of these estimated costs in assessing the proposed programs. Table 3 sets forth 2012 Program Cost Details and Cost Effectiveness for all programs filed in the 2012 EE Plan both with and without the estimated values identified in this Supplement. As Table 3 demonstrates, the results of the Societal Cost Test show no change for each program when accounting for the avoided estimated external costs of SO₂, NO_x, PM₁₀ and water usage.

Table 3

		Results with Externalities		Filed Implementation Plan Results	
2012 Program Cost Details and Cost Effectiveness		Lifetime Net Benefits (\$)	Program Level Societal Cost Test	Lifetime Net Benefits (\$)	Societal Cost Test (Program Level)
	Efficient Products	\$2,215,592	3.3	\$2,200,235	3.3
	Appliance Recycling	\$220,083	1.7	\$217,529	1.7
	Res. New Construction	\$504,060	1.7	\$500,837	1.7
	Existing Homes and Audit Direct Install	\$207,259	1.1	\$196,354	1.1
Residential	Shade Tree	\$108,976	1.9	\$107,030	1.9
	Low Income Weatherization	\$11,293	1.0	\$10,266	1.0
	Multi-Family	\$236,576	3.9	\$235,199	3.9
	Subtotal	\$3,503,839	1.8	\$3,467,451	1.8
	C&I Facilities	\$3,283,036	3.0	\$3,258,155	3.0
	Bid for Efficiency - Pilot	\$447,402	2.7	\$443,480	2.7
Commercial	Retro-Commissioning	\$635,005	3.8	\$630,594	3.7
	Schools Facilities	\$493,223	4.6	\$489,990	4.6
	Subtotal	\$4,858,667	3.1	\$4,822,219	3.1
	Home Energy Reports	\$119,680	1.4	\$118,271	1.4
Behavior	Behavioral Comprehensive Program	\$1,037,193	3.0	\$1,030,890	3.0
	Subtotal	\$912,784	2.4	\$906,050	2.4
	Education and Outreach*	\$0	N/A	\$0	N/A
Support	Residential Energy Financing*	\$0	N/A	\$0	N/A
Programs	Codes Support*	\$0	N/A	\$0	N/A
	Program Development, Analysis and Reporting Software	-\$222,480	N/A	-\$222,480	N/A
	Subtotal	-\$222,480	N/A	-\$222,480	N/A
	Total	\$9,052,810	2.2	\$8,973,240	2.2